

### **REMARKS**

Claims 1-3, 5, 6, 9, 10 and 19-23 are pending in the application. Applicants request entry of amended claims 5, 9 and 21.

### **FINAL REJECTION**

Applicants first note that:

"receiving image data comprising a representative sample of the backing surface, the image data including chrominance values in multiple channels for selected pixel locations along a scanline;

determining an average chrominance values for each of the multiple channels;

selecting a registration channel based on the average chrominance values;

determining a chrominance deviation for the registration channel; and

determining a registration parameter based on the average chrominance value and the chrominance deviation of the registration channel"

were all limitations of the originally filed claims. Therefore, the new ground of rejection introduced by the Examiner in was neither necessitated by applicant's amendment of the claims, nor based on information submitted in an information disclosure statement and Applicants' respectfully request withdrawal of the final rejection of the claims.

### **REJECTION UNDER §112**

Claims 21-23 were rejected under 35 U.S.C. 112, *first* paragraph, as failing to comply with the written description requirement. According to the Examiner, "average backing surface chrominance value" and "color difference value" recited in claim 21 were not described in the specification so as to reasonably convey that the inventors had possession of the claimed invention.

Claim 21 has been amended and is believed to be in condition for allowance. Claims 22 and 23 are dependent upon claim 21 and are believed to be allowable because claim 21 is allowable.

### **REJECTION UNDER §103(a)**

Claims 1-3, 5-6, 9-10, and 19-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Buchar (US 2002/0126299) in view of Lubin (US 6,137,904).

Claims 1 and 21, the independent claims still pending in the application, both recite identifying pixel position by processing chrominance values and thus, are distinguishable from the cited references.

### **THE CLAIMED INVENTION**

Present systems and methods are directed to a scanning system that uses chrominance information to determine one or more registration parameters used in document edge detection (Abstract).

Specifically, the method of claim 1 recites receiving image data representing the backing surface, wherein the image data includes chrominance values in multiple channels and recites using the chrominance values in various calculations to determine a registration parameter. As explained in the specification, Applicants' methods are directed to automatically detecting registration parameters, which may be useful, for example, in a CVT reproduction system with readily detachable scanner backing skis that allows a user to select an appropriate backing for a given application and may be particularly useful when images are scanned in a YCbCr, Lab or other color space and/or when there is insufficient luminance variation between the input document and the color of the ski in any of the available channels (e.g., ¶18).

### **THE BUCAR REFERENCE**

Buchar discloses detecting the gray level (i.e., luminance) values of the pixels corresponding to the ski [¶133] for each channel, then performing edge detection based upon the detected luminance values. Buchar fails to disclose or suggest detecting chrominance and does not detect edge detection based upon chrominance values.

Buchar discloses a CVT document handler and imaging system with detachable backing skis [¶30]. However, in contrast to present systems and methods, Buchar only discloses processing of the luminance component of the captured image data.

### **THE LUBIN REFERENCE**

Lubin relates to assessing the effects of physical imaging parameters on the subjective performance of an imaging or other signal processing system and more specifically, to assessing the visibility of differences between two sequences of time-varying visual images. The specification discloses a signal processing system having a perceptual metric generator that predicts the perceptual ratings that humans will assign to a degraded color-image sequence relative to its non-degraded counterpart. This perceptual metric generator includes an input signal processing that transforms input signals into light outputs, then to transforms the light outputs into psychophysically defined quantities that separately characterize luminance and chrominance.

The perceptual metric generator includes an input signal processing section, a luminance processing section, a chrominance processing section, a luminance metric generating section, a chrominance metric generating section and a perceptual metric generating. The input signal processing section first transforms input signals into luminance and chrominance components. The luminance metric generating section receives the luminance component of both the test and reference images and generates a luminance just-noticeable difference (JND) map- an image whose gray levels are proportional to the number of JNDs between the test and reference image at the corresponding pixel location. Similarly, the chrominance metric generating section receives the chrominance components of the test and reference images and produces a chrominance JND map.

The transformation of the input signals into luminance and chrominance components requires several processing stages, including the transformation of  $Y'$ ,  $C_b'$ ,  $C_r'$  data, to  $R'$ ,  $G'$ ,  $B'$  signals that drive a CRT display and modeling the transfer of  $R'$ ,  $G'$ ,  $B'$  signals into  $R$ ,  $G$ ,  $B$  display intensities. Lubin discloses three options for specifying the vertical representation of  $(R, G, B)$  images and explains that luminance and chrominance processing are identical for

two of these options. Contrary to the Examiner's suggestion, Lubin does not suggest that the processing of luminance and chrominance data is always identical or that such processing would be identical for distinguishing image pixels from pixels that represent a backing surface.

According to the Examiner, Lubin also discloses that gray level values may include chrominance values for "the advantage of reducing processing time and memory requirements by 50%." Even if that is the case, however, nowhere in Applicants specification is it suggested that chrominance data is used to reduce memory requirements. As stated throughout the specification, present systems and methods relate to the detection of background-to-medium transitions in an imaging system with detachable scanner backing skis that allows a user to select an appropriate backing for a given application (§22).

The claims are therefore in condition for allowance.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he is hereby requested to call the undersigned attorney at 212-716-4121.

Respectfully submitted,

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September 2, 2008

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